

### **REMARKS**

Claims 16, 17, 20, 22, 27 and 28 are now pending in the application. Claims 16-17, 20, 22, and 27-28 are amended herein. Claims 18-19 and 21 are cancelled herein. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

### **SPECIFICATION**

The title of the present invention is changed to "LIQUID CRYSTAL DISCHARGING METHOD, AND LIQUID CRYSTAL DISCHARGING DEVICE" so as to conform to the claims. Accordingly, the Applicant believes that the objection to the specification should be withdrawn.

### **REJECTION UNDER 35 U.S.C. § 103**

Claims 16-22 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hsieh et al. (U.S. Pat. No. 6,867,840) in view of Yamamoto et al. (JP 09-138410), and further in view of Hashizume et al. (U.S. Pat. Pub. No. 2002/0062787). This rejection is respectfully traversed. Notwithstanding, claims 18, 19 and 21 are cancelled.

With respect to claim 16, a liquid crystal discharging method is recited. The claimed method includes: "determining an arrangement pitch of the liquid droplets to be arranged in line on the substrate based on a diameter of the liquid droplets after impact of the liquid droplets on the substrate, which was measured in advance; measuring a weight of the single liquid droplet for obtaining said diameter; and discharging the liquid droplets from the nozzles such that: each of the liquid droplets has said weight; and

thereby the diameter of the liquid droplets after impact is roughly equal to the arrangement pitch of the plurality of pixel regions, and each of the plurality of pixel regions is coated with the liquid droplets".

Therefore, in the claimed liquid crystal arrangement method, the liquid droplets can be discharged/arranged on the substrate such that the peripheral edges thereof which join with the neighboring liquid droplets can be reliably disposed on boundaries between the pixels, which are non-displaying portions. With this feature, the liquid crystal arrangement method according to claim 16 can reliably resolve the problem explained in the original specification (i.e., "In the case of methods for forming a film on a substrate by discharging a liquid material in the form of liquid droplets, or methods for arranging liquid crystal on a substrate by discharging the liquid crystal in the form of liquid droplets, the peripheral edges of the liquid droplets tend to remain unevenly in the form of drop marks. *This unevenness causes a deterioration of uniformity of the film thickness, and may cause a deterioration of visibility in displays such as liquid crystal devices*" on page 2, lines 1 to 6, in the original specification of the present application).

On the other hand, Hsieh et al. neither discloses nor suggests "the diameter of the liquid droplets after impact be roughly equal to the arrangement pitch of the plurality of pixel regions" which is one of the main features of the claimed invention. Furthermore, as shown in FIG. 3E, the discharging device of Hsieh et al. discharges liquid crystals 170 into recessed portions each demarked by micro cell structures 350. This means that the diameter after impact of the liquid crystals 170 is restricted by the size of the recessed portions; therefore, Hsieh et al. neither discloses nor suggests

controlling the diameter after impact, because it is determined by the size of the recessed portions.

In addition, Yamamoto et al. and Hashizume et al. do not suggest resolving the above-mentioned problem (i.e., a deterioration of visibility in displays due to deterioration of uniformity of the film thickness). Therefore, the combination of Yamamoto et al. and Hashizume et al. which do not teach the above-mentioned problem and Hsieh et al. which does not teach the necessity of controlling the diameter after impact cannot reach the claimed invention.

Accordingly, claim 16 should be allowable since it includes the above-mentioned feature which cannot be obtained just by combining the citations. In addition, claim 20 should be allowable for at least the same reasons as those set forth above for claim 16.

In addition, claims 17, 21, and 22 should also be allowable due to their dependency on allowable claim 16 or 20.

Claims 27 and 28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hsieh et al. (U.S. Pat. No. 6,867,840) in view of Yamamoto et al. (JP 09-138410), and Hashizume et al. (U.S. Pat. Pub. No. 2002/0062787) as applied above, and further in view of Yamamoto et al. (U.S. Pat. Pub. No. 2004/0201818). This rejection is respectfully traversed.

Yamamoto '818 neither discloses nor suggests controlling the diameter after impact. Accordingly, the combination of Yamamoto et al., and Hashizume et al. which do not teach the above-mentioned problem, and Yamamoto '818 and Hsieh et al. which do not teach the necessity of controlling the diameter after impact cannot reach the present invention.

Accordingly, claims 16 and 20 still should be allowable since each of them includes the above-mentioned feature which cannot be obtained just by combining the citations, and enable resolving the above-mentioned problem. Thus, claims 27 and 28 should also be allowable due to their dependency on allowable claim 16 or 20.


In view of the foregoing, reconsideration and withdrawal of the outstanding rejections are respectfully requested.

### CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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